



Hepatitis B and Hepatitis C in multi-center hemodialysis patients in Tehran

KEYWORDS

hepatitis B, hepatitis C, hemodialysis

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ABSTRACT *Introduction: The transmission of hepatitis C virus in dialysis centers in all around the world is increasing. The extent of increasing is fluctuating between 5 percent in Arab countries to 70 percent in some of the underdevelopment countries. The purpose of this study is assigning the amount of the spread of the infection with hepatitis B and C in some hemodialysis centers in Tehran city.*

method: This study was a cross - sectional study. 103 patients were enrolled and recorded Patients' demographic characteristics. Then were taken blood sample for testing of Hbs antigen, Hbs antibody, HBC antibody, HCV antibody and HCV PCR. And was used statistical software SPSS-ver 18 for assessment and analysis

Results: 103 patients including 61 male (59/2%) and 42 female (40/8%) were involved in this study. The average age in the present study was 62, 6. The average time of dialysis was 48,6 month that this average was significantly more among women than men ($p=0.018$). One patient had positive HCV PCR (1%), two patients had positive HCV AB (1, 9%), there was insufficient HBS Ab in 28 cases (27, 2%). There was one positive HBS Ag patient (1%) and five patients were positive HBC AB (1%).

Conclusion: Due to the high prevalence of hepatitis C virus in hemodialysis patients, it is recommended that Anti HCV test to be taken before admission in dialysis units. And to recommend to the annual check HCV PCR in this patient. It is also recommended that quantity HbsAb be checked twice a year and in the people who HBS Ab response is inadequate Vaccination done through intradermal or a dose 2 times. Check hepatitis B shouldn't be restricted to assigning the level of HBS Ag and checking the HBC AB needs to routinely be done.

Introduction

Today, hepatitis C and B of the key priorities of the health system in the world and it is important to consider the prevention of these diseases. Due to is that the 5- 10% of cases of hepatitis B and more than 50% of hepatitis C cases will be lead to chronic liver disease.(1) According to reports on the effects of severe liver disease and higher mortality in Dialysis patients infected with hepatitis B and C, Unavailability vaccines to prevent diseases of HCV, the high cost and side effects of medication and raised other means of transmission, Identification of patients with HBV , HCV and risk factors is essential in dialysis centers, to reduce new infections . In the previous studies performed in Iran, has been reported the prevalence of hepatitis C virus antibody in the 4.9% of patients in the central province, %5/5 of Shiraz (2), %9/55 of Rasht (3), 23.9% of Qazvin (4) and 13.2 % of Tehran (5). However, have been reported the prevalence of antibodies to hepatitis C virus in dialysis centers in developing countries such as India (6), Jordan (7), Turkey (1), Syria (8) and Saudi Arabia (9), respectively, with 30% , 6/34%, 41%, 9/48% and 7/55%. This study is done to determine the prevalence of HBV and HCV antibodies and risk factors associated with viral transmission, in multi-center hemodialysis patients in Tehran.

Methods:

This study was a cross - sectional study. 103 patients were enrolled and recorded Patients' demographic characteristics. Then were taken blood sample for testing of Hbs antigen, Hbs antibody, HBC antibody, HCV antibody and HCV

PCR. And was used statistical software SPSS-ver 18 for assessment and analysis.

Results:

103 patients were enrolled with a mean age of 62.6 years. The smallest patients, 24 years and the oldest patient was 89 years old. Sex distribution of the study sample consisted of 61 males (59/2%) and 42 women (40.8%). The mean BMI of patient's was 24 kg / m². 33 patients had a BMI above 25. Of 103 patients, 54 patients (52/4%) had a history of blood transfusion .1 patient (1%) had a history of tattoos. 1 patient (1%) heart disease, 18 patients (17/5%) hypertension and 9 patients (7/8%) had diabetes. 21 patients (20/4%) of the patients had a history of bloodletting. The mean duration of dialysis was 24 months. The mean duration of dialysis in women and in men in this study was 48/6 and 25/2 months who average in women was significantly higher than men ($P =0.018$). For one patient HCV PCR (1%) and 2 patients HCV Ab positive (1/91%) were reported. The three cases reported in this study were women. HBS antibody levels in 28 samples (27/2%) less than 10, and in 75 patients (72/8%) of these antibodies has been more than 10 (Figure 1). 1 patient had positive HBS Ag (1%). HBC Ab in 5 patients (9/4%) was positive which 3 of these patients were male (60%). There were no significant differences between the sexes ($P =0.54$). There was no significant correlation between BMI and HBS Ab ($p =0.971$).

Discussion:

Viral hepatitis is a major public health problem that Blood-

borne hepatitis make up a significant proportion of mortality, disability, economic burden, social and psychological. It is estimated that about 350 to 400 million people worldwide are HBV carriers (10, 11) and currently about 123 million people worldwide infected with hepatitis C (12). Hemodialysis patients are one of the groups at risk for infection with these viruses. Research done in various countries, a much higher prevalence of hepatitis C virus infection show in these patients compared to healthy blood donors (13,14) Which have been reported range from 3.2% to 72.3% (15). Previous studies have shown severe chronic liver disease and higher mortality rates in hemodialysis patients infected with HCV and HBV compared with hemodialysis patients who are not infected with the virus (16, 17). The results of our study show that the prevalence of anti-hepatitis C is about 2 percent. This rate is lower than the rate of 9.55 percent Rasht (10), 5.5 percent of Shiraz (18) and 23.9% of Qazvin (4) In addition prevalence of antibodies to hepatitis C virus mentioned in comparison with the reported frequency of dialysis centers in developing countries such as India (6), Jordan (7), Turkey (1), Syria (8) and Saudi Arabia (9) respectively, 30%, 6/34%, 41%, 9/48 and 7/55 percent shows lower rate of infection with this virus in the center. In the present study not significant relationship was found between age, BMI, tattoos and hepatitis C antibody. But was observed between female and antibodies against the hepatitis C virus. Also the mean duration of dialysis was observed higher in females than males in this study that is positive factor for hepatitis C antibody positive in women. Because, as stated above, all HCV-positive patients (both in terms of both antibody and PCR), were female. Those results were similar results samimi and colleagues in the central province. A report from Saudi suggests a significant relationship between antibody positive and male patients on dialysis. (19). in this study, duration of dialysis was identified a risk factor for hepatitis C virus.

Conclusion:

Due to the high prevalence of hepatitis C virus in hemodialysis patients, it is recommended that Anti HCV test to be taken before admission in dialysis units. Although some do not recommended separation of dialysis in this group of patients. But strategies such as the control of the service provided to the patient, such as blood transfusion, isolation of patients and personnel trained seems necessary in the prevention of infection. And to recommend to the annual check HCV PCR in this patient. In connection with hepatitis B, with regard to the prevention of its, recommended vaccinations done in the broader community And people who have risk factors for chronic kidney disease, From the time diagnosis of disease, vaccinations are done before the need for dialysis procedures for their. It is also recommended that quantity HbsAb be checked twice a year and in the people who HBS Ab response is inadequate Vaccination done through intradermal or a dose 2 times. Check hepatitis B shouldn't be restricted to assigning the level of HBS Ag and checking the HBC AB needs to routinely be done.

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